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MODIFICATION OF PLANS AND PERSONALITY CHANGE

by

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Modification of Plans and Personality Change", submitted by George Gordon Manson in partial fulfilment of the requirements for the degree of Master of Education.

ABSTRACT

This dissertation was designed to determine whether the development and execution of cognitively-mediated Plans, as conceptualized by Miller, et al, will result in altered behavior in tension-evoking situations.

Treatments which incorporated both the development and execution of Plans were devised for each of two experimental groups. In one group members undertook treatment independently in individually-arranged circumstances which, contextually, were stressful for the individual members. In the second group members collaborated in the formation and execution of Plans, in accordance with the expressed commonality of stress-evoking situations.

The findings of the study indicated that individuals can be induced to develop Plans for coping with stress. However, the positive effects resulting from the subsequent execution of those Plans were not as general as hypothesized. On the evidence served by the statistical comparison of pre-treatment and post-treatment mean item changes occurring on the Taylor MAS for experimental and control groups, no significant between-group differences were indicated by an analysis of variance. Significant among-group changes within the Individual Treatment Group and significant between-group variances, however, pointed to positive personality changes for approximately one half of the members of the two experimental groups. This finding was clearly supported by interview and questionnaire data collected, respectively, immediately subsequent to treatment and one year later.

The concept of the Plan, as applied to a counseling context, is judged to possess functional value for some, but not all clients.

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CHAPTER I

STATEMENT OF THE PROBLEM

> Now, as soon as someone suggests that people are like computing machines - and we hear that said everyday - it should become clear that if the suggestion is true, people must have programs also. If man is like a computer, then man must have somewhere available an organized set of instructions that he attempts to execute. That is to say, the man must have a Plan. By taking the analogy between man and computer with complete sincerity is one driven to search literally for the source of instructions that guide human behavior. (Miller, et al, 1960, p.197).

The above statement reflects the new tenor of thought which characterizes the coalescence of recent streams of investigation into human behavior. This rediscovery of mind as he refers to it, is described by Hunt (1961) when he outlines new approaches to the nature of intelligence emanating from such sources as "....observations of human behavior in solving problems, the programming of electronic computers and neuropsychology. (Hunt, 1961, p. 109).

Contrary to the assertions of such psychologists as J. B. Watson (1915), B. F. Skinner (1938), and Guthrie (1952), these new streams of investigation have brought renewed credence to the assertions of such others as Hebb (1949), Osgood (1953), and Scheerer (1954), that the mind serves to mediate the interactions between the individual and his environment.

This study derives from the view that behavior, including that broad range of behavior which might be termed deviant, is a consequence of stimulation and that cognitively-mediated strategies will result in altered behavior in stressful situations.

The employment of cognitive theory by psychotherapists and other psychologists interested in deviant behavior, is not entirely new and not entirely popular. However, the writings of Kelly (1955) and Phillips (1956) are supportive in that they represent the application of cognitive theory to

counseling practice. Also fundamentally related to the rationale of the study is the view of Rokeach (1960) that personality, ideology, and cognitive behavior may all be explained by a single, unifying set of concepts. Pertinent, too, is the theoretical position stated by Christensen and Macdonald (1960): "There is a direct but not necessarily simple relationship or correspondence between cognitions (thinking) and overt behavior." (p. 211)

In attempting to apply cognitive theory to psychotherapeutic practice the theoretical substrate selected was the computer theory analogy to human behavior represented in the book by Miller, et al.(1960) Herein, the idea is projected that people, like computers, mediate and execute Plans for coping with the environment. A subsequent chapter will develop further the notions, not only that of Miller, et al, but of certain others whose writings lend support to the conceptualizations upon which this study is based.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

1. THE STRUCTURE OF BEHAVIOR: A THEORY BY MILLER,GALANTER,AND PRIBRAM

The theorizings of Miller, et al, (1960), represent an attempt to place the explanation of behavior, especially that of human beings, on a more substantial basis than that provided by both stimulus-response and recent cognitive theorists. Miller, et al, postulate that some mediating entity is needed to explain, not only the correlative existence of stimulus and response of associationist theories, but also the hitherto existing weakness of cognitive theory that resides in what Miller, et al, refer to as "the theoretical vacuum between cognition and action." (1960, p. 11)

Cognitive theorists have long recognized that man needed some means of representing everything about himself and the external world. This representation Miller, et al, refer to as an Image, after the "memory" of the modern electronic computer. What was needed additionally to bridge the gap between cognition and behavior was a Plan, corresponding to the program of a computer through which the Image would find expression as behavior.

One clue to the manner in which the Plan organizes behavior, according to Miller, et al, is found in the tendency on the part of man to organize, not only the way in which things are perceived, but also the manner in which he organizes his actions, temporally, as well as patternwise. They postulate that these configural properties are characterized by varying levels of complexity such that the result is a "hierarichal organization of behavior" (p. 15) This is to say that behavior may be viewed in terms of molar units which in turn are divisible into molecular units.

A. Definitions

Since the terms employed by Miller, et al, are the ones used in this treatise, the following terms are presented in the interests of reader understanding.

Plan. When capitalized, the term Plan will refer to "any hierarchical process in the organism that can control the order in which a sequence of operations is to be performed." (Miller, et al, 1960,p. 16) Contexually, it will refer to any course of action proposed and executed by an experimental subject.

Strategies and Tactics. Consistent with the hierarichal organization of behavior, the molar levels will be called strategies and the molecular levels will be called tactics.

Execution. When an individual is executing a particular Plan, this shall be taken to mean that it is the Plan which is controlling the sequence of operations. Moreover, it shall be understood that the execution of a Plan is a step-by-step operation, and that, notwithstanding the possibility of alternation, only one Plan may be executed at a time. The possibility exists, likewise, that the execution of Plans may find either convert or overt expression. It will also be considered that the individual may have in storage at any one time Plans in addition to the one being executed at any given moment.

Image. The Image represents the sum total of cognitions, that is, the "accumulated, organized knowledge that the organism has about itself and its world." (p. 17) In speaking of the Image, more than imagery is implied; rather, "it includes everything the organism has learned - his values as well as his facts - organized by whatever concepts, images, or relations he has been able to master." (p. 17, 18)

B. Assumptions

Miller, et al, it is to be remembered, had set themselves the task of investigating the relation between the Image and the Plan. To forestall any tendency to view the two concepts as mutually exclusive entities, the following assumptions were proposed:

1. A Plan can be learned and so would be part of the Image.

2. The names that Plans have must comprise a part of the Image for human beings, since it must be part of a person's Image of himself that he is able to execute such-and-such Plans.

3. Knowledge must be incorporated into the Plan since otherwise it could not provide a basis for guiding behavior. Thus, Images form part of Plans.

4. Changes in the Image can be effected only by executing Plans for gathering, storing, or transforming information.

5. Changes in the Image can be initiated only by executing Plans.

6. Changes in Plans can be effected only through information drawn from the Image. "The transformation of descriptions into instructions is, for human beings, a simple verbal trick." (p. 18)

C. The TOTE Unit: The Unit of Behavioral Analysis

In order to clarify the relation between the Image and the Plan, Miller, et al, drew again upon the computer analogy for a parallel and found it in the connection known as the "feedback loop" (p. 26) This computer circuit provides a link between the computer's program and its memory so that, as each operational sequence is executed, an informational impulse travels back to the machine's memory.

The corresponding behavioral unit conceptualized by Miller, et al, is called a TOTE (Test - Operate - Test - Exit) Unit. It corresponds functionally to the feedback unit in computers. When a Plan is initiated,

each step in the execution of the resulting behavioral sequence is tested or evaluated according to some criterion set up by the Image. If the conditions of a "test phase" are not met, the "operate" phase is re-initiated until such time that the test criteria are satisfied or until some modification is introduced in the Plan in the form of, say a stop-order or a revision. A functional illustration of a TOTE unit is found in Figure 1 on Page 7.

What is it that flows along the arrows? (See Figure 1) Miller, et al, postulate three possibilities:

1. Energy could conceivably travel along the arrows, in which instance the arrows would not be arrows but neurons, and the TOTE unit might be a reflex.
2. Information could flow along the arrows and the information would be the extent of correlation between the terminals of the TOTE unit, for example, the extent of congruity, or lack of it, between the "test" and "operate" phases of the operation.

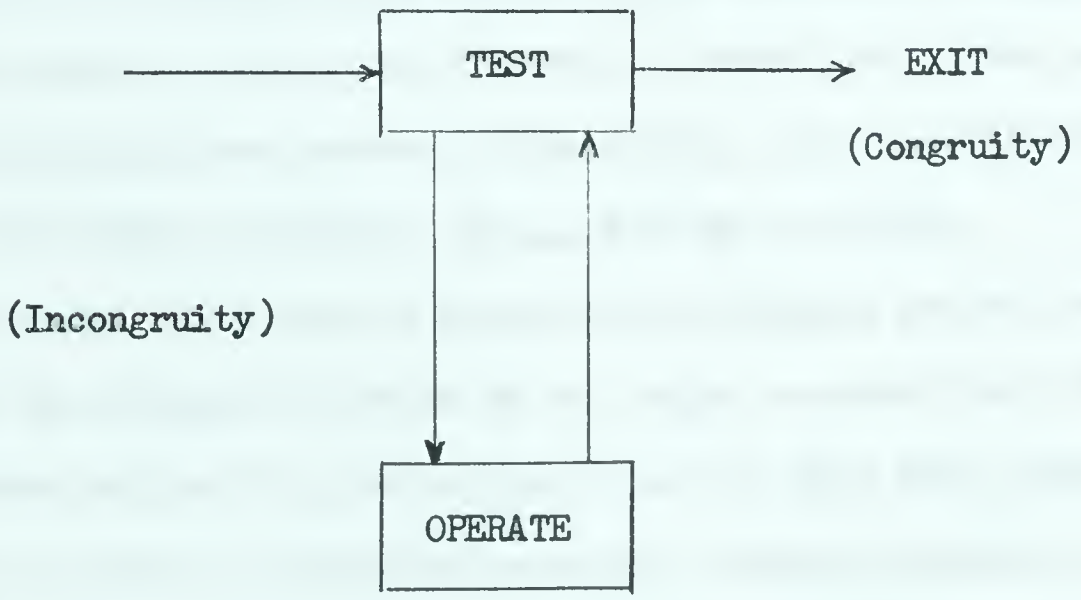

FIGURE I

THE TOTE UNIT OF BEHAVIOR

(Miller, et al, 1960, p.26)

3. The preferred possibility of the three is that, in some manner, control flows along the arrows. The underlying logic of this idea resides in the description presented earlier of the Plan as being a hierarchical structure or list of instructions to be executed in some predetermined sequence. Consequently, some means is required to actuate in succession each step in the sequence.

The impression may have been created that a complex Plan is executed via one TOTE unit. In order to accommodate both strategic and tactical units of behavior, the structural units must also be organized as a hierarchy. Miller, et al, suggest in this connection, that "the operational components of TOTE units may themselves be TOTE units. That is to say, the TOTE pattern described both strategic and tactical units of behavior. Thus the operational phase of a higher order TOTE might itself consist of a string of other TOTEs, and each of these, in turn, may contain still other strings, and so on." (p. 32)

D. The Role of Intentions and Values in the Execution of Plans

The relation that exists between an individual's Plan and his Image resides in the relation between, respectively, his intentions and values. These, in the schema of Miller, et al, add up to motives.

They ask, "What does it mean when an ordinary man has an intention?" They reply by stating, "It means he has begun the execution of a Plan and that this intended action is a part of it." (p. 61) What this conveys is that, while man can claim an extensive range and number of skills in his repertoire of behavior, it is not until he initiates a Plan utilizing any of these skills that he can claim any intention concerning them. The travelling salesman, as an example, is probably sufficiently literate to permit the occasional communication with his wife; however, unless a Plan is initiated to write home, the

salesman cannot yet claim any intention of doing so. Further, as the Plan to write home is executed, each sub-part in the temporal succession of events composing the Plan's execution, becomes clear.

But "doing", or "action", as the authors point out, cannot be dissociated from "valuing". Evaluation must govern the very selection of a Plan to execute and evaluation must determine the efficacy of the Plan and its component sub-parts as it is executed. This evaluative aspect of behavior is part of a person's Image and is exercised via the Test phase of every TOTE unit. Consequently, the hierarchy of TOTEs to which reference was made earlier,can exist in isomorphic relationship with a hierarchy of values, that is to say, tests and prototests.

In this schema the sub-parts of a Plan may have either positive or negative evaluations. The effect of placing a negative evaluation upon a sub-part of the Plan does not result necessarily in the abandonment of the Plan. It may be that the end result of a complex Plan will be sufficiently gratifying that an individual can first intend and then carry out subordinate actions that he considers undesirable.

Miller, et al,believe that, so long as man is drawing breath, Plans are being executed. There is, therefore, not only need for a "working memory" to facilitate the consciousness and remembering of Plans presently being executed, but also for a "dead storage" area for Plans about which there are no intentions.

This working memory is an important concept. While its locus has not been pin-pointed, some place of ready access is needed for Plans or parts of Plans which are relatable to Plans presently underway, or for Plans which are interrupted temporarily to permit the execution of higher, priority Plans, e.g., "I'll stop for a loaf of bread after I've picked up the mail."

The availability of a working memory, whether located within a person's

frontal lobes or on his memo pad, provides no guarantee that Plans will be remembered. Whatever the reasons for the forgetting of intentions, Miller, et al, suggest, "forgetting an intention appears to have some active quality to it that is not involved in the kind of forgetting Ebbinghaus studied." (p. 69)

Some Plans, for instance, are pursued while others are discarded. It is readily conceivable in such instances that the evaluative function of the Image determines the appropriateness or palatability of the Plan. If the execution of a Plan is to produce unwanted change in the Image, the Plan may be abandoned. What Miller, et al, have to say about this regulatory function of the Image has real significance for this study:

> .....we accept the notion that dynamic changes in the Image - especially in the evaluative aspects of the Image - exert close control over the Plans we try to execute. Altering the planner's Image is a major dynamic mechanism for altering his Plan, and thus for altering his behavior. (Miller, et al,1960, p. 69)

The question to which the focus of this study will return later, is whether Plans can be made sufficiently acceptable to the Image that previously unwanted alterations to the Image will be permitted.

Not all reasons for forgetting Plans are traceable to the censoring function of the Image; it seems that Plans undergo constant revision even as they are being executed. The consequence of this is that the intention regarding the execution of a minor sub-plan may be forgotten. Then, too, Plans may be forgotten because they are not feasible.

Miller, et al, place an interesting interpretation upon what they call "effort of will". (p. 71) They think that much, if not most, of our planning takes the form of inner verbalism. Very possibly, when we make use of an emphatic inner speech to remind ourselves, for instance, to get down to work, Miller, et al, say "it is the Plan that is running our information - processing equipment." (p. 71)

E. The Integration of Plans

It is customary to find that people are carrying on several Plans at once. It is, obviously, to one's advantage that concurrent Plans be coordinated where possible, into one course of action.

Certain facts govern the extent to which Plans may be integrated. One might ask:

1. Are the Plans sufficiently flexible as to permit rearrangements of sub-parts, combination of sub-parts into larger Plans, or substitution of sub-parts of the Plan in order to facilitate integration? (One might ask, also, what it is that governs the extent to which people are receptive to rearrangements in their planning.)

2. Are the Plans sufficiently compatable to permit integration? Miller, et al, cite as an example, the man who attempted "to write an introductory physics text in the form of a novel so that people would read it." (p. 97) These two Plans could not be coordinated.

Very often persons who try to coordinate two incompatable Plans, are unaware that something is amiss, but at a loss to indicate what it is.

Neurotic people commonly are found in this predicament. The personal investment in each of two Plans may be so great that abandonment of either Plan is quite unlikely.

3. Are the Plans being coordinated by one individual or by several, or more?

This is frequently done when a public plan requires a course of action that single individuals might not be willing or able to achieve by themselves. Where cooperative planning occurs, each participating member usually assumes responsibility for some fragment of the public plan and incorporates the fragment into his own personal Plans. Hence, a considerable degree of subdivision of responsibility is possible.

This kind of collaboration may be vastly more difficult than the coordination by one person of his own personal Plans. For one thing, the integration of Plans ideally should be carried out by the person who is formulating and executing several different Plans. If intelligent coordination is needed to effect the coordination, a mechanism is, of course, required. The one envisaged is the TOTE hierarchy which can test and operate upon other TOTE hierarchies. This is to say that Plans can operate upon Plans, and Plans can operate upon information to guide behavior.

F. Relinquishing the Plan

Miller, et al, ask, "How do you persuade people to give up a segment of their lives in order to execute the common plan?" (p. 103) And they state that hypnosis is the only circumstance in which people surrender their own Plans for those of another.

In proposing a description of how this occurs, reference is made to the well known fact that most of our planning is the subjective accompaniment to our inner speech. In the hypnotic trance both the voice and the Plan belong to the hypnotist.

Why does this not happen to the ordinary wakeful individual? It is true that he may hear Plans which are voiced by others, but he is capable of exercising the option whether to incorporate them along with his own, or to reject them. The hypnotized subject, on the other hand, is in a Planless state, and, based on the assumption that one must be executing some Plan at all times, the hypnotized subject will, accordingly, accept the hypnotist's Plans and execute them instead.

How does it happen then, that a hypnotized person ceases to make Plans? Miller, et al, state that the state of sleep is similar to hypnosis in that conditions of quiet and darkness usually prevail, and the person turns off

his own inner speech. It is at this point, apparently, that the would-be sleeper goes to sleep. Similarly, the hypnotist tells his subject to relax and to stop speaking to himself whereupon the hypnotized person begins to respond to another's Plan, spelled out by another's voice.

An alternative, more difficult way of inducing hypnosis,is to fire a rapid barrage of difficult and conflicting instructions at the subject. The result is that the subject's own planner becomes so confused and overloaded, it accepts the Plans of the hypnotist as a welcome alternative. Lest it be thought, however, that hypnosis is easily induced, it is pointed out that the hypnotist must supply Plans which are feasible and which create the impression of being initiated by the subject himself.

This conception of hypnosis assigns a crucial role to speech; speech is thought to set the strategy for much of what people do. Yet, some of the planning which occurs for normal, wakeful persons, seems to assign to behavior a routine for handling reiterative situations in order that the same old decisions need not be made in each of these recurring instances. The hypnotized subject, however, tends temporarily to abandon his "posture-Plan, to lose the ability to remember events which occurred during hypnosis, and to suspend "stop-rules". (p. 109) Illustrative of the last-named incapacity is the well-known insensitivity to pain; wakeful people usually issue stop-orders to the pain-evoking behavior.

Miller, et al, relate certain other hypnotic phenomena to their conceptions of planning: (p. 11)

1. When a hypnotist stops talking to his subject, we should expect to see the subject lapse into quiet immobility, or fall asleep, or become dehypnotized.

2. Posthypnotic suggestions are Plans - made well in advance for the subject by the hypnotist and carried unconsciously until the time when the

Test phase is satisfied and the Plan is executed.

3. The subject must trust the hypnotist, but no love or transference situation is necessary to establish the phenomenon.

4. Any drugs that would interfere with speech should make a person easier to hypnotize, which seems to be the case.

The concept of Plan would appear to be explanatory of much of hypnotic phenomena, but the greater value of Plan, as pointed out by Miller, et al, relates to:

> ..... the intimate connections that are implied among volition, inner speech, and normal working consciousness. It is not too improbable, we feel, that consciousness is in some essential way the capacity to execute them. If so, then language, by extending man's ability to Plan, must tremendously expand his consciousness of himself and his world, over that available to, for instance, a chimpanzee. (p. 11)

It was earlier hypothesized that wakeful people tend to engage in the execution of Plans every waking moment of their lives. Probably, a state of total Planlessness is equivalent to death. Further, to be caught without a Plan when one is needed, is a painful experience. This happens, psychiatrists report, when one cannot resolve a conflict between two or more competing Plans or when a previously useful Plan is no longer feasible.

This state of relative planlessness can arise from brain damage, when the complexity of an ambiguous situation transcends one's ability to cope, when one's source of borrowed Plans disappears, and when one is confronted by an entirely new situation for which he is unprepared.

Irrespective of the reason for Planlessness, whether it be threat to the Image or extensive change in the Plans, this fact that a previously enduring Plan requires alteration of a strategic sort is, emotionally, acutely disturbing. When the ensuing emotional excitation cannot be expended on a target either in the Image or in action, the resulting condition is one of anxiety. Consequently, the person will develop Plans for coping with the

anxiety rather than with the realities of his circumstances.

Miller, et al, explain the suffering which accompanies the surrender of Plans, by stating that in giving up a Plan, an individual's Image of himself is thereby affected in ways not readily acceptable to the individual. This fact can be stated alternatively by asserting that the Plan must, of necessity, be represented in the Image. Consequently, Plans may be assigned positive, or negative, valuations by the Image. This assignment of values to the Plan's representation in the Image could conceivable then affect a decision to transfer a familiar Plan to a new situation.

G. Differences in the Way People Make Plans

The study of behavior reveals few historical antecedents which bear on the way people make Plans. Both the Image, or however it is conceptualized by various psychologists, and behavior, have provided the major diggings in which the ongoing "search for significant dimensions of difference" has been going on. (p. 117) It is well known that the camps of "searchers" have been conspicously aloof, that they have failed to realize that the constructs, both of Image and of behavior, are necessary to the full accounting of behavior. They have failed to realize that, in their digging, there is a necessity of unearthing the link between Image and behavior.

The various disparate investigations have revealed the Image, a relatively stable entity, to be quite unproductive of the kinds of differences which delight psychologists; behavior, as is realized, is possibly quite discouragingly productive.

And what of Plans? Miller, et al, refer to these as a domain inherently rich in extensive, significant individual differences "where the differences cannot easily be attributed to evaluative origins, and where we can find a rich source of clinical insights." (p. 118)

1. Source It is possible to distinguish between people according

to the manner in which they tackle problems. Since Plans are communicable, "other-directed" persons may utilize borrowed Plans; "inner-directed" people may be more self-reliant. (p. 119)

2. Span The temporal range over which Plans operate represents another variable, one which extends conceivably from a few seconds to a lifetime.

3. Detail Depending on how complex a Plan is, people will vary considerably in the amount of meticulous detail they will direct to the execution of the Plan. Compulsive people are rather finicky as a rule.

4. Flexibility When the component parts of a Plan can be substituted readily or rearranged without consequent detriment to the feasibility of the Plan, it is then described as flexible. Rigid people are rather stubborn about permitting structural changes and/or interruptinns during the execution of a Plan.

5. Speed It is obvious that people differ in this variable; however, not only intelligence, but also skill, it is suggested, are contributory to differences.

6. Co-ordination Some are better able to co-ordinate two or more Plans into a single stream of activity. Intelligence seems to be one explanatory factor; however, it does not appear to be the only one.

7. Retrieval Whether one's working memory is internalized or represented externally by such a thing as a shopping list or memo pad appears to be a matter of preference or habit. Some people constantly require knowledge of progress during the execution of a Plan; others can nonchalantly drop one Plan while they embark upon another.

8. Openness Great secrecy may attend the Plans of some people; others appear to operate according to the dictum "that it pays to advertise". Some "advertise" but fail to execute.

9. Stop-orders Where and when to say "Stop" in the execution of a Plan depends, not only on how reluctant one is to terminate action, but also on the kind of valuations held by the Image concerning the executory outcomes of the Plan.

The differences in the ways in which people make Plans are considered by Miller, et al, to relate to personality structure and they envisage these differences as traits.

H. The Formation of Plans

Completely new Plans probably are created infrequently. New Plans generally, are revamped old Plans, or borrowed from someone else. The detail of many, if not of most of our Plans, is circumscribed by the prescriptions of societal expectations and, as well, the rigid molds represented by grammatical rules.

Hence, most Plans are remembered rather than created. Some, like the Plans for alphabet and counting,are stored intact, that is, memorized. Others, possibly, are represented in memory by metaplans by which a large number of Plans may be represented. Formulas, mottoes, and other operating principles are the order of metaplans that can be adapted to a wide variety of specific situations. It may be said that we have Plans to generate Plans.

This explains what happens when we encounter a problem in which old Plans cannot be adapted to the demands of the new situation. Miller, et al, propose that problem-solving probably operates according to a heuristic process having the following four phases:

1. The problem must be understood.

2. A Plan is designed.

3. The Plan is executed.

4. The result is checked. (p. 179, 180)

The first step clearly involves the Image in the process, in order that

criteria may be established by which to evaluate the solution to the problem.

The second step is most critical of the four since it involves, not only the determination of the requirements of the problem situation, but also the creation of "a Plan that will guide the system and connect the data to the unknown". (p. 180)

Step Three, dealing with the execution of the Plan, while possibly difficult in practice, is readily understood in concept.

The fourth step points to a possible reinforcing effect.

I. Summary

Miller, et al, have proposed that, structurally, behavior consists of two reciprocally operating systems, that is, a dynamic Image which performs test functions on behavior which is controlled by Plans.

The basic functional unit is called a TOTE (Test-Operate-Test-Exit) unit.

In the sequential execution of each element of a hierarchically organized Plan, receptor inputs are matched (Test phase) against the standards required by the Image. Where incongruities are found to exist, the effector system "operates" to establish congruity between input and Image requirements. When this happens, then control "exits" to the next TOTE unit corresponding to the succeeding element in the executory sequence of the Plan.

The Image processes incoming information about the organism and its world, and this information contributes to the valuing standards by which the execution of the Plan is judged.

Plans are essentially lists of instructions hierarchically organized into strategies and tactics. The execution of Plans seems closely related to inner speech. Intentions refer to those portions of Plans which await execution.

To the extent that their executions are compatable, two or more Plans,

of one or more persons, can be co-ordinated. The attempted coordination of incompatable Plans usually contributes to emotional disturbance, as does execution of infeasible Plans.

Once a Plan is positively valued by the Image, any major alteration to higher level subordinate strategies is painful to the individual. Minor changes may be permitted, depending on how flexible the person is.

The ways in which people make Plans are extremely variable and can be represented as relatively stable personality traits. New Plans are probably rare; usually they evolve from revisions in older Plans or as borrowings from other people. When new Plans do arise, the process usually incorporates, briefly, understanding of the demands of the situation, creation of a Plans, execution, and evaluation.

II. PSYCHOTHERAPY AND COGNITION: A RESUME OF THE THEORIES OF ELLIS, PHILLIPS, AND ROGERS.

When one considers that a clear understanding of human behavior, continues to elude its students, it is not surprising to find that a multiplicity of concepts has been advanced by way of tentative explanation. While some theorists would have one believe that their views really do transcend the merely tentative, very little a posteriori verification can be advanced favouring one psychotherapeutic rationale over another. Meanwhile, the search for an adequate theory goes on.

Among the adherents to the view that behavior is cognitively oriented, are a comparatively small number of psychotherapists. The view of several of the more prominent of these will be outlined.

A. Rational Psychotherapy - Albert Ellis

In describing his theoretical orientation, Ellis says this: "The central theme is that psychotherapists can help their clients to live the most self-fulfilling, creative and emotionally satisfying lives by teaching these clients to organize and discipline their thinking." (1958, p. 35)

Ellis began his professional career as an orthodox psychoanalyst, but shifted his theoretical orientation to that of an analytically oriented psychotherapy. (Ellis, 1957) He claims that, subsequently to this, his proportions of failures decreased.

Ellis thinks of all aspects of behavior - perception, movement, thinking, emotion - as integrally interrelated, and that what we think of as cognitive behavior cannot occur in the absence of its sensory, motor, and emotional aspects. The implication of this is that any influence directed at one side of behavior generally makes its presence felt on another side as well. As Ellis puts it: "Rational psychotherapy is based on the assumption that thought and emotions are not two entirely different processes, but that they significantly overlap in many respects and that, therefore, disordered emotions can often (though not always) be ameliorated by changing one's thinking." (1958, p. 36)

He explains how emotionalized behavior can be moderated cognitively by stating that "since man is a uniquely sign-symbol-, and language - creating animal, both thinking and emoting tend to take the form of self-talk or internalized sentences; and that, for all practical purposes, the sentences that human beings keep telling themselves <u>are</u> or <u>become</u> their thoughts and emotions." (1958, p. 36)

Ellis believes then that illogical, irrational, unrealistic behavior requires a re-educative approach which utilizes the following steps:

1. Confront the client with his past and present behavioral inadequacies.

2. Illustrate how these inadequacies contribute to his existing, unhappy, disturbed state.

3. By referring to the internalized speech designate the illogical links in his statements.

4. Show him how to re-think, to replace the illogical ideas with logical ones; point up a more rational philosophy of living to replace the former irrational system of beliefs. If, as an example, an individual's overt behavior demonstrates the expectancy that his every action should elicit approval by those around him; the more sensible alternative of catering to the demands of his own self-respect, is presented as a new implicit subject for his internal speech.

It is noteworthy that the therapist is attempting to get the client to change his picture of himself, to show him that he is a worthwhile person.

Such an approach as Ellis employs would require, in addition to the personal qualities essential to successful counseling, friendliness, understanding, - that of salesmanship. Ellis would probably concur in this assertion, would admit that his technique involves contradiction and denial of self-defeating beliefs previously learned by the client. He would say that the therapist must also, at times, apply encouragement, persuasion, cajolery, and even commands.

Ellis concedes that the application of analysis followed by reconstruction of maladaptive behavior does not succeed for all clients. Some lack intelligence, some are too emotionally disturbed, some are too old to change their beliefs.

B. Interference Theory - E. Lakin Phillips

The operating principles employed by Phillips in the conduct of psychotherapy are similar to those professed by Ellis. The latter believed the function of the therapist to be that of convincing a disturbed client that he must substitute an effective, satisfying behavior for an ineffective, depressing behavior. Phillips sees the therapist's function in this light: "if one is going to change a person's behavior, he has to interfere with what the person is doing, with his assumption-system, with his assertions or

with their degree. The clinician teaches the patient to bet less, or to bet on different probabilities." (1956, p. xvi)

Phillips' theoretical position departs from the "depth" view of mind proposed by the psychoanalytic school and attempts to fit the therapeutic process onto a learning theory model. It is believed that the consequence of this approach is to attribute to the individual greater control over his own destiny by reason of the greater choice made available to him in the selection of his activities and in the opportunities to direct his intelligence along constructive channels.

The foregoing remarks are by way of preface to the conceptualizations subsumed in Phillips' Interference Theory. It is first of all important to note that in this theory every person's behavior, whether "normal" or not, reflects the kind of assertions he makes about himself and his environment. One may, for instance, assert to himself that he is the "life of the party". According to Phillips, this individual would then select behavior appropriate to this assertion and the ensuing reactions of those around him will serve to confirm or to disconfirm his assertions. Confirmation is satisfying; disconfirmation, however, conflicts with one's assertions and results in tension, the degree of which will vary with the strength of his assertions and/or the finality of the disconfirming experiences. (1956)

The effect of the discomfort is to initiate <u>redundancy</u>, that is, the onset of a circular reactions in which the effort to confirm the assertion is increased, thereby increasing also, the magnitude of the initial conflict. Additionally, detrimental side effects may begin to show; for example, guilt, temper tantrums.

Treatment consists in breaking up the circular reaction by assisting the patient to revise his assertions, thereby, to increase the odds that he will select behavior that will elicit a confirming, rather than disconfirming,

reaction.

It will be noted that the revision of a patient's assertions proceeds in a manner analogous to Ellis' rational approach. The patient's behavior is logically analyzed, interpreted, and he is helped to restructure his assertions with the help, largely, of the information needed to lend increased reality to his beliefs about himself and his surroundings.

C. Self Theory - Carl Rogers

"To recognize that, when a person's views of himself change, his behavior changes accordingly, and to puzzle over this, is again the beginning of both theory and science." (Rogers, 1959, p. 189) This statement, rendered in the context of reminding that science must be rooted in observation, constitutes an encapsulated reference to Rogers' views on personality, psychotherapy, and the method whereby he attempts to substantiate them.

Dating from 1942, when his first book on client-centered therapy appeared, Rogers' beliefs about personality and psychotherapy have evolved more or less concurrently, and coincidently, with the accumulation of a rich body of empirical support accruing from his practice and research. (1942, 1951, 1959)

Rogers sees an individual as an organism residing in the center of his own continually changing world. The "world" in this context, is viewed, not so much in geographical terms, but as the totality of the individual's reality.

Each individual interacts with his reality in ways which are consistent with an actualizing tendency, that is, an "inherent tendency of the organism to develop all its capacities in ways which serve to maintain or enhance the organism." (Rogers, 1959, p. 196) This interaction of individual and experience is of crucial importance: that part of the total individual which

is known as the self "becomes differentiated and symbolized in an awareness of being, awareness of functioning." (Rogers, 1959, p. 223) Further, "this awareness of being and functioning becomes elaborated through interaction with the environment, particularly the environment composed of significant others, into a concept of self, a perceptual object in his experiential field." (Rogers, 1959, p. 223)

Secondly, the individual values all experience in accordance with a need for positive regard, both by himself and others; moreover, experience which does enhance the self is valued positively, experience which does not is valued negatively.

Self-experiences which are avoided or are selected for their enhancement potential, represent conditions of worth. When regard is experienced unconditionally, no conditions of worth develop, but because of this need for self-regard, experience tends to be viewed selectively and in accordance with conditions of worth. Consequently, "experiences which meet these conditions will be perceived and symbolized accurately in awareness. Experiences which run contrary to the conditions of worth, are perceived selectively and distortedly as if in accord with the conditions of worth, or are in part or whole, denied to awareness." (Rogers, 1959, p. 226)

Individuals tend to perceive their self-experience, then, according to the congruence with the self. Experiences which are not congruent with the self, tend to be subceived as threats and, therefore, are countered with defensive behavior, to wit, distortion of the perception or denial of the experience. One can see that the consequence of symbolizing such experiences would be to violate the conditions of worth, frustrate self-regard, and to generate anxiety. Moreover, if this defensive behavior fails, and the incongruencies are represented accurately in awareness, the behavior of the individual will break down.

Reintegration of behavior reverses the process by which defenses are invoked. What previously constituted incongruence between self and experience is permitted accurate representation in awareness, and assimilation, rather than rejection of the experience occurs. The criterial circumstances which attend this reversal of the defense process include decreased conditions of worth and increased unconditional self-regard.

Rogers states that, as an individual comes to accept himself more fully, so will he come to accept others more readily. Also, the individual comes to realize that he can regulate his behavior with autonomy. In short the individual comes to trust the valuing efficacy of his own perceptions of experience.

CHAPTER III

POSTULATES AND HYPOTHESES

The foregoing chapter presented views of behavior as revealed in four cognitively oriented theories. One must be impressed by the shared tendency to stress the manner in which the individual receives and evaluates incoming sensory data about his world and also how, according to the nature of the perceptions and valuations, responses are mediated. Rogers speaks of a self which mediates behavior in such a way that congruence is achieved between perception of experience and the notion of self. Ellis believes man operates according to the beliefs he holds concerning himself and reality; to the extent that the rationality of his cognitive behavior contains the irrationality of his emotional behavior, man will attain self-fulfillment. Phillips describes behavior by saying that the individual makes assertions about himself and his world and then selects behavior according to the best available prospects for confirmation. In Phillips' model, confirmation of assertions is adjustive; disconfirmation, however, results in conflict.

In the conceptualizations of Miller, et al, and Image, representing the total sensory input about the individual and his environment, performs the evaluative functions of Rogers' self, Ellis' belief system, and Phillips' assertions. However, Miller, et al, present a much clearer picture of the manner in which the individual's values are realized in behavior, and, in elaborating the construct called the Plan, provide the necessary explanatory linkage between cognition and action.

The interesting notion of sub-vocal speech finds expression in the theories of Ellis and Miller, et al. One could also imagine that Phillips' assertions are expressed as inner speech.

At this stage in the development of the treatise, it is pertinent to consider the relevance of these theories to the manner by which people handle

stressful situations, and to look into the therapeutic potentialities of the Miller, et al, process of forming and executing Plans.

Miller, et al, do not apply their theory to psychotherapeutic practice. Ellis, Phillips, and Rogers think of therapy as a helping relationship and of the therapist as essential to the new learning associated with the improved adjustment of the client. Rogers does admit that in situations involving incongruencies of a relatively mild nature, an individual can, by thinking through privately the circumstances containing the threat to the self, revise his concept of self to admit the truth of the denied or distorted perception. (Rogers, 1951) Usually, however, the revision of personality can occur only in the threat-free relationship of client and counselor. All agree that the counselor must be accepting of the client. Ellis and Phillips, in addition to this, emphasize that the role of the counselor is also that of making available to the client date contributory to a change in his assertions or beliefs.

Postulate

Predicated upon the foregoing theoretical positions in the following postulate:

If behavior is cognitively oriented, then an induced alteration in thinking will result in altered behavior.

Hypothesis

The following two-pronged hypothesis is presented for experimental testing:

1. Through presented verbal instructions, persons can be induced to develop Plans for coping with stressful situations, and through verbal instructions to themselves, to execute those Plans, and,
2. The effect of such executed Plans will evoke changes in behavior which are detectable on a paper and pencil personality inventory, semi-structured interview, and questionnaire.

CHAPTER IV

EXPERIMENTAL DESIGN

Description of the Sample

The Taylor Manifest Anxiety Scale was administered to 338 Freshman in an introductory psychology course. In order to encourage veracity in answering, no names were required on the answer blanks. The subjects were informed that the purpose of the study was to determine the relationship between test scores and such other data as was to be provided, namely, age, date of birth, sex, and religion. By matching this information against the office files, it was possible, at a later time, to identify those subjects selected for treatment.

Subjects whose scores fell in the top quartile of the distribution of MAS "A" scores were approached, told that their names had been drawn at random, and asked if they would be willing to participate in an experiment. From the group who agreed, 36 subjects * were selected for treatment, on the following basis:

1. Their "L" scores did not exceed 1.5 standard deviations above the population mean of "L" scores.
2. They could be matched according to age, sex, SCAT, and scores made on the "A" scale.

The 36 subjects were then matched, and on a random basis divided into on control and two experimental groups. The control group will be known hereafter as the "C Group". The experimental groups were designated the Individual Treatment, or IT Group, and the Group Treatment, or GT Group.

See Table I, Page 35, for a comparison of subjects in the three groups, according to the selected matching variables.

Treatment

The treatment accorded each of the Experimental Groups derived from the view that stressful situations could be managed through the development and

* One subject withdrew from the IT Group after treatment was initiated.

execution of cognitively mediated Plans. The treatment accorded each of these groups was similar in these respects: The first of six weekly meetings was spent in administering the Edwards Social Desirability Scale and in developing the rationale behind "Plan Therapy". Four treatment meetings then followed. (See Appendix A) In the sixth and last weekly meeting, the Taylor and Edwards Scales were re-administered by a colleague who purported to be studying test-retest reliabilities. All subjects met individually with the writer in semi-structured interviews. (See Appendix B) All subjects were canvassed by questionnaire one year later. (See Appendix C)

The Control Group, like the Experimental Groups, met weekly for six weeks, but as a discussion group. They undertook the same tests and were interviewed according to the same interview plan. The members of this group were not canvassed by questionnaire.

A detailed description of the treatment provided each of the Experimental Groups now follows.

I. T. Group

Because members of this group were expected to operate according to individual Plans, the weekly meetings served solely the purpose of clarifying procedures, providing encouragement, collecting completed "homework", and assigning new Planning exercises.

Initially, it was necessary to describe clearly the underlying theory behind Plans and how they could be developed and executed, using as illustrations examples of stressful situations suggested by the class.

They were shown how a Plan could be subdivided into a list of component strategies and tactics, that is, a list of things to do according to a predetermined order. As an illustration, writing an examination was put forth as evocative of considerable tension. The following Plan outline was proposed as a sequence of strategies and component tactics to be actuated by a person

on arrival at his place of writing:

a. Acknowledge the uncomfortable feelings

1. Do not attempt to suppress the feelings
2. Admit you are tense
3. Remind yourself that these feelings are characteristic of almost everyone
4. Remind yourself that some tension benefits performance

b. Direct your attention to the examination paper

1. Skim over the questions
2. Determine the order of answering questions
3. Select an easier question to answer first
4. Allot time allowance for each question

c. Begin

d. Note decrease in tension, if any

TABLE I

COMPARISONS OF MEANS AND STANDARD DEVIATIONS OF VARIABLES SELECTED FOR MATCHING OF SUBJECTS IN EXPERIMENTAL AND CONTROL GROUPS

Group Variable		IT Group (N = 11)	GT Group (N = 12)	C Group (N = 12)	Total
Age	$\bar{X}$	19.3	19.0	19.2	19.2
	s	1.2	1.0	1.0	1.0
SCAT (Raw Scores)	$\bar{X}$	72.2	72.7	74.8	73.2
	s	14.9	10.2	12.6	13.0
A Score	$\bar{X}$	30.6	29.5	29.5	29.9
	s	5.4	4.4	3.5	4.2

The treatment "homework" took the form of mimeographed assignments which required each subject to select from a list of sample situations which evoke stress, one which, typically, had proved bothersome to the subject.

Alternatively, he could select some situation not listed. For the situation selected, a detailed Plan had to be formulated, thoughts and feelings noted, an occurence of the situation arranged, and the consequences noted. Consequences were to be described introspectively, noting for example, decreased tension, increased confidence, no change.

The subjects were free to select different themes each week or to continue to experiment in the same problem area. The submission of a report each week was, however, mandatory. Individual treatment assignments are presented in Appendix A.

G.T.Group

The first of the weekly treatment meetings was directed to a theoretical exposition about the role of Plans in the adjustment to stressful situations. As with the IT Group, a sample Plan was developed for the purpose of illustration. The Group was encouraged to supply examples of situations in which Plans could be devised and executed.

Succeeding meetings featured a variety of contrived stress situations. (See Appendix A) These included the answering of the Analogies Test (from the Detroit Aptitude Tests) to the accompaniment of raucous heckling, and role playing. Examples of the latter were: the expression of deserved criticism to a "power" figure, standing up to an angry parent, leading the group in song. Consistent with group initiated operations, enactment, and evaluation of Plans was carried out by the Group. An effort was made to involve, directly, each member. The writer endeavoured to be fully accepting of each group member.

Testing Instruments

1. The Taylor Manifest Anxiety Scale (MAS)

The Taylor MAS was developed as a device to be used in the selection of experimental subjects for a study of eyelid conditioning. (Taylor, 1953)

Taylor believed that the level of anxiety or emotionality in people remained relatively constant and that its level could be determined using a paper and pencil test.

The form of the Scale used in this, contains 90 items taken from the Minnesota Multiphasic Personality Inventory and consists of 50 items from the Anxiety Scale plus 29 and 15 items from, respectively, the "K" and "L" Scales of the MMPI.

The MAS has received ample coverage in the literature, The research finding bearing on validational studies report low but positive validity coefficients. (Holtzman, et al, 1952; Grosz and Levitt, 1959; Kausler, et al, 1959) Likewise, reports of reliability are favourable. Taylor reports reliability coefficients ranging from .89 for 59 students retested three weeks later to .81 for 50 students retested over intervals ranging from nine to 17 months for the different students in the sample. Other studies yielding evidence of adequate reliability coefficients include Kendall (1954), Hilgard, et al, (1951), Spence and Taylor (1951).

The Taylor MAS was selected as a testing instrument for this study because it has had a favourable history of successes in the detection of gross behavioral changes following experimental treatment. This is in accordance with the hypothesis being tested in this study.

Also, the inclusion of the "K" and "L" Scales in the MAS was assumed to extend its usefulness for this study.

The "K" Scale

This scale was developed in an attempt to identify the extent to which subjects endorse socially acceptable statements and to reject those which are not. Probably, it is better to say that the scale is a measure of test-taking attitude. (Meehl and Hathaway, 1946) This, of course, may refer to many things; tendency to endorse socially desirable responses, an index of

well-being (a high score), an index of self-criticalness (a low score).

A high K-score then could, therefore, suggest a measure of defensiveness, or a desire to look "good". If, however, the "A" scale of the MAS has, as it was intended to do, "sorted out" anxious subjects for this study, defensiveness is a trait we should not expect to encounter.

The "L" Scale

The 15 items on this scale represent behavior situations which are socially desirable, but which could realistically be claimed by few persons. According to Meehl and Hathaway, the mean scores for normals on this scale ranges from three to five. (1956)

Interpretation of scores is possibly risky; conceivably, an individual could claim a score which exceeds the mean. Also, it is difficult to detect the intent to deceive when testing those perceptive enough to recognize the traps. Notwithstanding, the practice of "throwing out" scores in, say, in excess of five, represents a pre-caution if only to exclude scores marked by extreme distortion.

The Edwards Social Desirability Scale (SDS)

Edwards (1957) contends that people tend to respond to items on personality inventories according to social desirability and that, from inventory to inventory, this tendency is markedly consistent.

In constructing the SDS, Edwards requested ten judges to provide socially desirable responses to 150 items from the MMPI. The 79 items in which the judges agreed perfectly, composed the first SD Scale. This was subsequently reduced to the 39 items which most clearly distinguished between high and low scoring subjects on a sample of 106 college students.

Edwards reports high correlations between his 39 item scale and each of the Taylor Scale (-.84) and the K Scale (.81). (Because the SDS and Taylor scales are scored in reverse directions, the correlation may be read

as positive).

Edwards reports high correlations between his 39 item scale and various scales from the MMPI, including the Taylor MAS and the K Scales. He also reports a split-half reliability of .83 for a sample of 192 college students.

The SDS was used in this study as a check on both MAS A and K Scales. Firstly, since high scoring (anxious) subjects were expected to score low in social desirability, then a high negative correlation between the MAS A and the SDS was anticipated. Likewise, a lower relationship between K and SDS than reported by Edwards was expected since the subjects scored well below their parent population on the K Scale.

Testing

The SCAT Raw Scores employed in the formation of roughly matching groups, were kindly made available by the Student Counseling Services of the University of Victoria. All scales were administered by the writer on first testing; by a colleague on second testing.

CHAPTER V

ANALYSIS OF DATA AND RESULTS

Statistical Procedures

Means and standard deviations were computed for each of the variables according to which Experimental and Control subjects were matched. These statistics are presented for each group and for total subject, in Table 1, Page 29.

The differences between pre-treatment and post-treatment scores were determined for each subject. The "t" test of the differences was applied in order to establish whether any significant change had occurred within each group. The levels of significance prescribed were the .05 and .01 levels. For the IT Group, there were 10 degrees of freedom, hence the required "t's" for the .05 and .01 levels were, respectively, 2.23 and 3.17. For each of the GT and C Groups, there were 11 degrees of freedom, hence the required "t's" for the .05 and .01 levels were, respectively, 2.20 and 3.11.

The differences between pre-treatment and post-treatment scores having been determined for each subject, one-way analysis of variance procedures, as outlined in Winer (1962), were carried out in order to test differences between groups. The .05 and .01 levels of significance were prescribed as the desired levels. Consequently, F-ratios of 3.28 and 5.31 were required for significance at, respectively, the .05 and .01 levels.

In the eventuality that the variances of the groups were different, Bartlett's Test for the Homogeneity of Variance was to be applied, after Guilford (1956), in order to determine whether the treatment had any effect on variance. Again, the .05 and .01 levels of significance were prescribed. Also, F tests were to be applied to each pair of variances. The required F-ratios for significance at the .05 and .01 levels were, respectively, for the IT, GT and IT, C Groups, 2.86 and 4.54; for the GT - C Groups the .05

and .01 required levels were 2.82 and 4.46.

All of the above procedures were judged as adequate tests of the hypothesis relating to the examination of pre-treatment and post-treatment test differences.

Pearson product-moment intercorrelations were also completed between A, K, L, and SDS scores for both pre-treatment and post-treatment tests for experimental subjects only. The purpose of computing these intercorrelations was to examine directional trends in relationships when pre-treatment and post-treatment results were compared. Such comparisons as were made, were made at the level of inspection.

Evaluation of the interview and questionnaire findings centered upon the nature and directions of changes, as reported by subjects.

Results

1. Development of Plans

Members of the two experimental groups were generally successful in devising Plans as evinced by the calibre of assignments completed during the treatment sessions. How effectively the executions of those Plans contributed to positive behavioral change,could only be determined indirectly via paper and pencil inventory, interview, and questionnaire.

2. Changes Within Groups

The mean item changes, standard deviations of item changes, and t's are presented in Table II on page 37.

Only one significant mean item change was found to exist, and this at the .05 level on the A scale, for the IT Group. Since the direction of change was also positive, a reduced level of internal anxiety was indicated for the IT Group.

3. Differences between Groups

The results of analysis of variance of between-group differences are presented on Table III, page 38.

In no instance did the variance of the differences between treatments even approach significance. However, the application of the Bartlett and F - Tests (see Table IV, page 39) revealed significant differences in the variance of item changes over the two administrations of the three Taylor scales. More specifically, these results pointed to:

A Scale: significantly more variable effects of treatment within the IT Groups compared with the GT and C Groups.

K Scale: significantly more variable effects of treatment within the GT and C Groups compared with the IT Group.

L Scale: significantly more variable effects of treatment within the IT Group, compared with the GT and C Groups.

SDS Scale: no significant between-group changes in variance.

4. Relationships among test scales

The table of intercorrelations between pre-treatment and post-treatment scores is given in Table V, page 40.

The direction and magnitude of the pre-treatment intercorrelation coefficients becomes more meaningful when it is recalled that:

- all subjects scored as highly anxious on the MAS A Scale,
- while the A scores made by these subjects placed them in the top quartile of the parent population, the mean scores on the K and L scales placed the subjects nearly one standard deviation below the respective means of the parent population, pointing to lower valuations of self and less defensiveness than manifested by "normals".
- A and SDS scales are scored in opposite directions, so that a

TABLE II

MEAN ITEM CHANGES, STANDARD DEVIATIONS OF DIFFERENCES, AND t's FOR THREE GROUPS OF FOUR VARIABLES

Group		IT			GT			CONTROL		
Variable		$\bar{d}$	s	t	$\bar{d}$	s	t	$\bar{d}$	s	t
MAS	A	2.27	7.71	2.32*	1.58	4.42	1.28	4.00	4.71	1.36
	K	.82	1.72	.52	1.00	4.11	1.19	- .50	3.18	.92
	L	.55	2.72	.82	.25	.25	1.48	- .08	1.44	.42
SDS		.18	2.41	.73	.42	3.55	1.03	- .33	2.69	.78

* Significant at .05 level

TABLE III

ANALYSIS OF VARIANCE OF THE DIFFERENCES BETWEEN

PRE-TREATMENT AND POST-TREATMENT SCORES FOR

THREE GROUPS OF FOUR VARIABLES

Source	d.f.	SS				MS				F			
		A	K	L	SDS	A	K	L	SDS	A	K	L	SDS
Between	2	37.07	15.93	2.27	5.17	18.54	7.97	1.14	2.59	.53	.79	.30	.31
Within	32	1127.10	324.64	121.90	271.23	35.22	10.15	3.81	8.48				

Required F:

,05 = 3.30

.01 = 5.34

TABLE IV

BARTLETT TEST FOR HOMOGENEITY OF VARIANCE FOR

THREE GROUPS OF FOUR VARIABLES

Variable		Variance			B	F Tests		
		IT	GT	C		IT-GT	IT-C	GT-C
MAS	A	59.44	19.54	22.19	30.75**	3.36*	2.95*	1.32
	K	2.96	16.89	10.22	6.13*	5.71**	3.41**	1.67
	L	7.40	2.19	2.07	6.57*	3.38*	3.57*	1.06
SDS		5.81	12.60	7.24	1.37	2.17	1.25	1.74

** Significant at .01 level

* Significant at .05 level

negative "r" should read as a positive "r".

- The first administration of the SDS followed upon the acquiescence of the subjects to participate in the project. An element of threat, not present on the initial MAS testing, could have arisen at the time of administration of the SDS, conceivably resulting in an increase in test-taking defensiveness.

In the light of the above considerations, the nature and order of the pre-treatment correlations was perhaps, not surprising.

TABLE V

PRODUCT-MOMENT INTERCORRELATIONS BETWEEN
PRE-TREATMENT AND POST-TREATMENT (IN PARENTHESES)
SCORES FOR EXPERIMENTAL SUBJECTS (N 23)

Variable	K	L	SDS
A	-.12 (-.44*)	.30 (.12)	-.71 ** (-.80**)
K		.16 (.27)	.27 (.57**)
L			-.18 (-.27)

* significant at .05 level

** significant at .01 level

- no significant relationship was found to exist between A scores and either of K or L scores.
- The significant correlation (-.71) between A and SDS scores approaches that of -.84 reported by Edwards (1957, p. 33) for a more heterogeneous sample. This result was not unexpected inasmuch as 22 of the 39 items of the MAS overlaps the SDS. (Bendig, 1960)

- The correlation between K and both L and SDS scores was not significant. The low correlation coefficient (.27) between the K and SDS scores was perhaps surprising in the light of the r of .81 reported by Edwards (1957, p. 44) While an element of threat may have been introduced under the different circumstances under which the SDS was administered, it is questionable whether this would account for all of the variance. Since experimental groups had lower K scores than the parent population, this would also serve to depress an otherwise higher correlation between K and SDS scores.
- The low negative correlation between L and SDS scores varied from the coefficient reported by Edwards; who reported a low, positive correlation between L and SDS on his relatively unselected sample. (1957, p. 44)

Some interesting trends are noted. When the pre-treatment and post-treatment intercorrelation coefficients are compared, an increased, significant relationship is now found to exist between A and K scores, A and SDS scores, and K and SDS scores. One consequence of treatment, it may be suggested, is that the element of threat was diminished and that this would have been reflected in one or more of the following behavioral manifestations: increased openness, a reduced impression of uniqueness relative to the more unpalatable notions about self; therefore, decreased self-criticism and a greater tendency to claim socially desirable traits. In turn, one could expect, for the given experimental subjects, increased interrelationships among the scores obtained on the A, K, and SDS scales.

5. Interview and Questionnaire Data

Table V on Page 40 presents a summary of responses to questions directed to each subject during the semi-structured interview immediately

following treatment, and in questionnaires addressed one year later to members of the experimental groups. Of the 23 questionnaires distributed, 18 (78%) were completed and returned.

The interview data revealed that seven of the 11 IT subjects and six of the 12 GT subjects felt they could more nearly approach stressful circumstances with something of the assurance of the armed. Likewise, nine of the IT subjects and eight of the GT subjects stated their intention of utilizing the Plan concept on appropriate future occasions. This result lends support to the statistical findings, namely that the members of the IT Group appeared to derive the greater benefit from treatment. However, this data establishes somewhat more clearly that members of both groups, according to their reports, were aided in their attempts to cope with stress.

This data also made clear the fact that not all subjects made adjustive progress.

Analysis of the questionnaire returns revealed some consistency with interview findings. Seven of the nine IT respondents claimed continued use of the Plan concept; of this number, six reported continued growth in the ability to handle stress (including one who had,at the close of treatment, established himself as one of the disenchanted.) Similarly, six of the nine GT respondents claimed continued use of the Plan and, again five who reported growth had done so during the interview, and again, one who had abandoned the concept of Plans had inexplicably acquired renewed interest.

It is noteworthy, also, that one respondent from each group relinquished the Plan who had, one year earlier, reported benefit resulting from its application.

Discussion

The findings of this study lend support to the belief that some persons including highly anxious individuals,can be induced to develop Plans for coping

TABLE VI

SUMMARY OF RESPONSES TO QUESTIONS POSED TO SUBJECTS IN INTERVIEWS AND IN QUESTIONNAIRE* DISTRIBUTED ONE YEAR LATER

Interview Findings Immediately Following Treatment		Group IT (n=11)	GT (n=12)	C (n=12)
1. RE: claimed increase in ability to cope	Much	3	1	-
	Some	4	5	-
	Little or none	4	6	12
2. RE: intent to apply concept of plan in future				
	Definitely	9	8	-
	Doubtful or not at all	2	4	-
3. Admit to additional situations in which there is intent to apply concept of plan	Yes	9	9	-
	No	2	2	-
Questionnaire Finding one Year Following Treatment				
1. Number of respondents		9	9	
2. RE: claimed continued use of plan concept	Yes	7	6	-
	No	2	3	-
3. RE: claimed positive growth in reactivity to stress . . .	Much	-	2	-
	Some	6	4	-
	Little or None	-	-	-
4. RE: nature of invited comment concerning efficacy for self of Plan concept	Pro	5	5	-
	Con	-	-	-

* All subject were interviewed. Members of experimental groups only, however, received questionnaires.

with stressful situations and through instructions to themselves, to execute these Plans. This is to say that, quite apart from the effect of the execution of such Plans, some individuals can devise cognitively mediated Plans, consisting of component sequential strategies and tactics, for dealing with events in their experience. The execution of said Plans is via instructions to the self. In reality this amounts in part, to sub-vocally telling oneself what to do, a phenomenon known to almost all mankind.

In the context of the study, however, experimenter coercion, albeit encouraging, increased the probability that planning would be done, that Plans were understood, that the planning was systematic, and that the Plans were executed and evaluated. This correspondends to Ellis' description of rational psychotherapy as basically teaching a client to organize and discipline his thinking. (Ellis, 1958)

Only the Individual Treatment Group showed a significant mean item change as a consequence of treatment. This result, plus the positive evidence from interviews and questionnaires, lent qualified support to the hypothesis that the effect of executing Plans will evoke changes in behavior for some if not all individuals; changes which will show up in a paper and pencil inventory, semi-structured interview, and questionnaire.

The analysis of variance did not lend support to the hypothesis. Yet, while the between-group item changes were not significantly different on any of the scales, the variance of item changes between groups on the three Taylor scales did prove to be significantly different. The effects of treatment, then, were to produce significantly greater variability among item changes on the A scale for the IT group, a consequence, very likely, of the development of individually tailored Plans, is opposed to group-designed Plans and no Plans, for respectively, the GT and C Groups. This fact of variability is consistent with the previously cited findings, respectively, of

Miller, et al, and Ellis; that people vary in their ability to develop and execute Plans, and that not all people respond to rational psychotherapy.

The apparent limited success of the Plan was not restricted to the IT Group. The effect on GT individuals, as evinced by the interview and questionnaire findings, showed the Plan to have had a measure of success with half of this group, as well. Whether or not this success was entirely attributable to the application of the Plan concept is not known, since group interaction effects represented an uncontrolled variable. This possibility that group membership effects could contribute to behavior change apart from planned therapy effects, was noted by Peters. (Peters, 1961)

The selection of the Taylor MAS as a means of identifying anxious subjects for experimental treatment was justified, as noted earlier, on the strength of the documented use of the instrument for this purpose. Its subsequent use as a detector of behavioral change was not as clearly supported. While the statistical treatment of results revealed that some significant changes took place in group terms to members of only the IT Group, some changes also occurred, according to self reports, to individual members of the both experimental groups. Because statistical treatment of date obscures effects on individuals, both types of evidence are essential considerations in research of this nature in order to canvass all existing possibilities for change.

Another check in the use of the MAS, it is suggested, was provided by the use of the Edwards SDS. Because 22 of the 39 items on the MAS A Scale overlaps the SDS, one would expect a substantial degree of relationship between the two scales. Edwards, of course, attributes the high correlation to the tendency of subjects to respond to scale items on the grounds of what is socially desirable behavior. Bendig (1960) contends that the SDS also measures anxiety and neuroticism factors. Notwithstanding the small size of

the sample, Bendig's contention is borne out in this study; while the pre- and post-treatment correlations between the A scores and SDS scores (See Table V) were of the order reported by Edwards (1957, p. 33), the correlations between the two sets of K and SDS scores were substantially less. Also, since the experimental subjects had scored low on K compared with the parent populations, the tendency to answer the A Scale items in order to "look good" or because of feelings of worth should have been less than that expected of relatively non-anxious subjects.

Bendig (1960) also suggested that the SDS contained a "lie" component. Again, both sets of correlations between L and SDS scores reported in this study, remained below those reported by Edwards (1957, p. 44). In consequence of these findings, then, it may be that for this study, the SDS turned out to be a more effective determinant of anxiety status than of social desirability factors.

Interestingly, and although not anticipated when the MAS was chosen as the major measuring instrument, the K and L scales also acted as checks on treatment effects. It is to be noted that when anxiety is reduced, feelings of worth and self-acceptance should increase. Yet, while substantial between-group changes were not supported by the analysis of variance, the between-group variances and intercorrelation coefficients did support trends in the direction of increased feelings of self-acceptance.

The summary evidence provided by the above sources point to support of the hypothesis on behalf of half the subjects in the Individual Treatment Group. A lesser measure of support of the hypothesis, but support, nonetheless, was provided by approximately half the membership of the Group Treatment Group. Moreover, an increase in the number of treatment sessions, it is felt, would have helped to entrench the trends to improved adjustment that were noted and to facilitate as well the generalization by the subjects of the Plan concept to a broader range of troublesome behavior situations.

CHAPTER VI

SUMMARY AND CONCLUSIONS

Summary

The purpose of this study was to determine the usefulness of the Plan concept as formulated by Miller, Galanter and Pribram, in a counseling context. Two experimental groups and one control group, all consisting of highly anxious students, were drawn from a population of 338 Freshman Psychology students. The experimental groups were called the Individual Treatment and Group Treatment Groups in correspondence to the treatment approach used in the group meetings. Treatment, carried on over a period of four weeks, devolved upon the formulation and execution of Plans as a means of coping with stress. An attempt was made to create an acceptant atmosphere. The findings may be summarized as follows:

1. Statistical tests were applied to the within-group differences between pre-treatment and post-treatment mean individual test scores and a difference significant at the .05 level was found for the Individual Treatment Group.
2. Analysis of variance of the between-group differences indicated no significant differences. Bartlett's Test of Homogeneity confirmed the presence of a between-group variance, which could be attributed to a treatment-initiated score variability among members of the Individual Treatment Group.
3. Intercorrelations of the pre-treatment test scores and of the post-treatment test scores, revealed on a simple comparison by inspection a possible increase in the general willingness to respond to anxiety scale test items.
4. Semi-structured interviews and questionnaires administered one year later pointed to the feasibility of Plans as a method for

dealing with stress for approximately one-half of the subjects in both experimental groups.

CONCLUSIONS

The analysis of variance failed to indicate any significant between-group changes as a consequence of the experimental treatment. The treatment, therefore, failed to yield the overall, clearcut effects postulated in the hypothesis. Yet, despite this lack of predicted generality of treatment effects, the within-group changes, between-group variance, interview and questionnaire data pointed to positive personality changes for specific individuals in both experimental groups. In all, the results of the study seem to suggest that:

1. The concept of Plan has some validity for the practice of psychotherapy.
2. Increased feelings of worth appeared to be associated with successful application of Plans.

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A P P E N D I X A

APPENDIX A

1. Individual Treatment Group Assignments

Assignment No. 1

1. Consider any situation which, on the basis of recurring experience, evokes tension. Think freely about this situation in a personal, concrete manner.
2. Develop a Plan for dealing with this situation, should you encounter it. Your Plan must contain a systematic, step-by-step sequence of component strategies and tactics.
3. Arrange for an occurence of the troublesome situation.
4. Complete the following record:
   (a) In general or specific terms (whichever you wish) indicate the nature of the tension-evoking situation.
   (b) Record the thoughts or feelings aroused by freely thinking about the situation.
   (c) Describe briefly your Plan for coping with the troublesome situation.
   (d) Describe as accurately as possible the consequences of putting your Plan to work in an actual tension-arousing situation.

Assignment No. II

The assignment this week is similar to the one given last week, the exception being that it is more specific in nature. You are to choose one of the following suggested themes (unless you wish strongly to continue to experiment with the theme selected last week) and to deal with it in the manner described below:

Themes (Choose one)

1. Expressing affection toward a person for whom you feel affection

while finding it difficult or embarrassing to do so.

2. Asserting your independence if, and only if, the urge to do so has been strong but rarely expressed.

3. Seeking out the company of one or more persons with whom you have little in common and contributing profitably to the conversation. (Note: select this task only if it represents something you find difficult to do as a rule; also, it is expected the conversation should be of reasonable duration.)

Directions

1. Again, develop a detailed Plan and put it into action.

2. Complete the following:

   (a) Indicate the situation you selected.

   (b) Describe your Plan in brief terms.

   (c) Describe the consequence of executing your Plan in terms of (i) tension reduction (ii) self-understanding gained in the stressful situation.

Assignment No. III

This week's assignment provides further practice in the development and execution of Plans. Again, you have the option of continuing to "do battle" with a situation represented by the theme(s) suggested in our earlier meetings, or you may select a problem situation from the additional examples listed below.

Themes (Choose one)

1. Handling feelings of guilt, self-rejection, or self-hate generated by hatred toward parents.

2. Coping with an acute sense of failure in the face of something highly desired.

3. Coping with an acutely felt desire to injure someone or to smash things.

4. Coping with the feeling that things always go wrong for you.
5. Coping with disapproval by persons whose regard you value highly.
6. Coping with acute embarrassment on hearing smutty jokes.
7. Coping with an established fear or phobia, e. g. dentist, thunderstorms, dogs.

Directions

1. Develop a detailed Plan and put it into effect.
2. Complete the following:
   (a) Indicate the theme you selected.
   (b) Describe your Plan
   (c) Describe the consequences of executing your Plan, e. g. increased self-confidence, decreased tension, etc.

Assignment No. IV

You are encouraged this week to select a different problem area in which to apply the concept of the Plan. The theme selected may be one of your own choosing or selected from the list presented in Assignment III. This is repeated below:

Themes (Choose one)

1. Handling feeling of guilt, self-rejection, or self-hate generated by hatred toward parents.
2. Coping with an acute sense of failure in the face of something highly desired.
3. Coping with an acutely felt desire to injure someone or to smash things.
4. Coping with the feeling that things always go wrong for you.
5. Coping with disapproval by persons whose regard you value highly.

6. Coping with acute embarrassment on hearing smutty jokes.

7. Coping with an established fear or phobia, e. g. dentist, thunderstorms, dogs.

Directions

1. Develop a detailed Plan and arrange for its execution.

2. Complete the following record:

   (a) Indicate in general terms the theme you selected.

   (b) Outline your Plan.

   (c) Indicate the results of executing your Plan.

II. Group Treatments

NOTE: Printed assignment sheets were not distributed to members of this group at their weekly meetings. Members were required, however, to record their personal reactions to the group activities conducted in each of the sessions. The specific nature of these assignments is described more fully in the following accounts of the weekly treatments, beginning at the second meeting.*

Treatment Session No. I

1. The key points relating to the role of Plans in adjusting to stressful situations were reiterated.

2. Members were required to select from their own experience some situation which they found to be consistently stressful. (The example of receiving or bestowing affection without embarrassment was cited as an example.) They were then asked to think freely in a personal and concrete way about the theme selected.

3. The group was encouraged to cite examples of the various situations which evoke tension and to describe the feelings aroused. Responses were encouraged without coercion from all members.

* The first meeting of the Group had dealt with the theoretical rationale of the study.

4. The group was encouraged to develop cooperatively Plans for coping with various sample situations put forward, e.g. handling aggressive inclinations, shameful thoughts, reactions to authority.

5. The members were required to record their reactions to the discussion.

Treatment Session No. II.

1. The basic features of Plans and planning were reviewed with special emphasis given to the sequential nature of the strategies and tactics comprising a carefully developed Plan. It was pointed out that the execution of Plans necessitated practice, especially in emotionally upsetting situations.

2. The group was divided in two. The odd-numbered items from the Verbal Analogies Test of the D. A. T. was administered to one-half and the even-numbered items administered, subsequently, to the remaining half of the group.

   - The subjects not taking the test at the time were paired with the subjects taking the test and were instructed to heckle, as abusively and raucously as possible, their opposite numbers.
   - The test-taking subjects were instructed to develop a Plan to combat the distraction and to execute it while continuing to work as efficiently as possible on the test.
   - Roles were reversed and the assignment repeated.

3. Members were required to note results in terms of the success or failure of the Plan, what effect the heckling created, etc.

Treatment Session No. III.

1. Three examples of stressful situations involving interpersonal

relations were listed on the chalkboard: voicing disapproval of the inappropriate actions of a "power" figure, standing up to adjust accusations of an angry, authoritative parent, and being called upon to lead a group in song. Subjects were asked to suggest additional examples to add to the list.

2. Subjects were asked to indicate which of the listed situations were personally stressful. A request was made for two volunteers to enact one of the listed situations, selecting a situation which, for one of the volunteers at least, was tension-evoking.

   - It was pointed out that the role-playing was, after all, make-believe; that roles were not being played "for keeps", that the role-players could attempt to explore the situation as freely as possible without fear of failure.

   - The subjects comprising the audience were instructed, in following the dramatization, to think of how they would behave in the dramatized situation and to consider the effects of the different words and actions of the role-players upon one another.

3. The situation was enacted.

4. The role-playing subject enacting the "stressful" part was asked to describe the feelings experienced; listening subjects were also asked to contribute accounts of feelings evoked by the dramatization.

5. Suggestions were invited in the development of a Plan for coping with the tensions aroused in the situation enacted. Possible problems and possible solutions relating to either the development of the Plan or its execution, were considered.

6. Subjects were required to evaluate the success or failure of the session in terms of insights gained in their own behavior in troublesome situations. They were asked to anticipate the efficacy of the concept of Plans in dealing with stressful situations. They were asked to cite specific personal situations in which they judged the concept of Plans might apply.

Treatment Session No. IV.

1. The list of stressful situations drawn up at the outset of the Third Treatment Session, was replaced on the chalkboard.
2. The specific situation judged personally stressful to the largest number of subjects present was identified by show of hands.
3. A Plan was developed cooperatively for coping with the situation. An attempt was made to anticipate problems in the formulation and execution of the Plan.
4. Volunteers were called to dramatize the situation, making use of the group-developed Plan. Listening subjects were asked to think how they would behave, using the Plan.
5. The volunteer enacting the "stressful" role was asked to evaluate the efficacy of the Plan and its execution.
6. All subjects were asked to evaluate the failure or success of the session in terms of insights gained in coping with personally stressful situations.

A P P E N D I X B

APPENDIX B

Interview format

Name . . . . . .

Group . . . . . .

1. Self-reported changes in behavior, if any

2. General reaction to the study

   (a) Did you learn anything of real value that you would use in future stressful situations? Specify.

   (b) Have you in mind any stressful situations in which you want to apply the technique of planning? Specify.

3. How do you think other persons might react to the experiment?

4. What suggestions do you have for improving the sessions?

5. General notes on subject's reactions during interview.

A P P E N D I X C

APPENDIX C

Questionnaire

Name . . . . . .

Group . . . . . .

KINDLY ANSWER AS DIRECTED:

A. With reference to the study in which I took part, I have continued to develop and to use "plans" for overcoming or lessening tensions encountered in stressful situations.

Yes No

B. If you answered "Yes" in Part "A", please complete the following:

(1) The success I have experienced in the technique may be described generally as:

Scant Moderately good Very good

(2) The success I have experienced has confirmed the usefulness of the technique.

Yes No

(3) During the past year I have noticed a positive growth in my reaction to stressful situations and attribute this growth to the use of the experimental technique.

Yes No

Comments (if any)

C. If you answered "No" in Part "A", please complete the following. (Be frank)

The experience gained during the experimental sessions was a sufficient basis on which to reject the usefulness of the technique.

Yes No

Comments (if any)

KINDLY ENCLOSE IN THE ENVELOPE PROVIDED, AND MAIL AS IMMEDIATELY AS CONVENIENT.

Many thanks.

B29824